

## CLAIMS

I/We claim:

- [c1] 1. A system for use with a Bluetooth-enabled wireless device and a hands-free car kit having a cradle, the cradle having a cradle connector, comprising:
- an adapter module, the adapter module further comprising:
    - Bluetooth logic substantially compatible with at least one Bluetooth standard to wirelessly exchange communication signals with the Bluetooth-enabled wireless device,
    - hands-free communication logic substantially compatible with the hands-free car kit to exchange communication signals with the hands-free car kit, the Bluetooth logic being communicatively coupled to the hands-free communication logic to exchange communication signals,
  - an adapter connector corresponding to the cradle connector, the adapter connector being adapted to transfer electrical power from the hands-free car kit to the adapter module and to exchange communication signals between the hands-free communication logic in the adapter module and the hands-free car kit, and
  - a housing for enclosing at least part of the Bluetooth logic and the hands-free communication logic, the adapter connector being at least partially secured by the housing and wherein the housing is shaped and sized to fit at least partially into the cradle,
- wherein the Bluetooth logic, hands-free communication logic and adapter connector are configured to permit communications

between the Bluetooth enabled wireless headset and the hands-free car kit.

[c2] 2. The system of claim 1, wherein the adapter module further comprises:

a user control interface, the user control interface controlling at least one light emitting device to indicate a state of the adapter module, and control logic, the control logic being communicatively coupled to the Bluetooth logic, the hands-free communication logic and the user control interface,

wherein the control logic provides control signals to the Bluetooth logic and the hands-free communication logic to control the exchange of communication signals between the Bluetooth-enabled wireless device and the hands-free car kit.

[c3] 3. A system for use with a hands-free car kit having a cradle for receiving a wireless device and a Bluetooth-enabled wireless device, comprising:

an adapter module, the adapter module further comprising:

Bluetooth logic substantially compatible with at least one Bluetooth standard to exchange communication signals with the Bluetooth-enabled wireless device,

hands-free communication logic substantially compatible with the hands-free car kit to exchange communication signals with the hands-free car kit,

wherein the Bluetooth logic is communicatively coupled to the hands-free communication logic to exchange communication signals between the Bluetooth-enabled wireless device and the hands-free car kit.

[c4] 4. The system of claim 3, wherein the adapter module further comprises:

a user control interface, the user control interface controlling at least one LED to indicate a state of the adapter module,

control logic, the control logic being communicatively coupled to the Bluetooth logic, the hands-free communication logic and the user control interface,

wherein the control logic provides control signals to the Bluetooth logic and the hands-free communication logic to control the exchange of communication signals between the Bluetooth-enabled wireless device and the hands-free car kit.

[c5] 5. The system of claim 3, wherein the adapter module further comprises a housing for enclosing at least part of the Bluetooth logic and the hands-free communication logic, wherein the housing is shaped and sized to fit at least partially into the cradle.

[c6] 6. An adapter module for use with a hands-free car kit and a wireless device wherein the wireless device has a primary wireless communications capability for communicating with other wireless devices and secondary wireless communications capability, the adapter module comprising:

wireless transceiver circuitry, the wireless transceiver circuitry being substantially compatible with the wireless device's secondary communications capability to exchange communication signals with the wireless handset; and

hands-free communication logic, the hands-free communication logic being substantially compatible with the hands-free car kit to exchange communication signals with the hands-free car kit, the hands-free communication logic being communicatively coupled to the wireless

transceiver circuitry logic to exchange communication signals between the wireless handset and the hands-free car kit.

[c7] 7. The system of claim 6, wherein the wireless handset's primary wireless communications capability and secondary wireless communications capability operate according to incompatible signaling principles.

[c8] 8. The system of claim 6, wherein the wireless handset's primary wireless communications capability and secondary wireless communications capability operate according to compatible signaling principles.

[c9] 9. The system of claim 6, wherein the wireless handset's secondary wireless communications capability operates substantially according to IEEE 802.11.

[c10] 10. The system of claim 6, wherein the wireless handset's secondary wireless communications capability operates substantially according to a Bluetooth standard.

[c11] 11. The system of claim 6, wherein the wireless handset's secondary wireless communications capability operates substantially according to a wireless networking protocol.

[c12] 12. The system of claim 6, wherein the wireless handset's secondary wireless communications capability operates substantially according to at least one standard associated with contactless smart cards.

[c13] 13. The system of claim 6, wherein the wireless handset's secondary wireless communications capability operates substantially according to at least one IrDA standard.

[c14] 14. The system of claim 6, wherein the wireless handset's secondary wireless communications capability operates substantially according to a Home RF standard.

[c15] 15. A system for adapting a hands-free car kit having a cradle, comprising:

an adapter module, the adapter module further comprising:

Bluetooth communication means for wirelessly exchanging communication signals with a Bluetooth-enabled wireless device, and

hands-free communication means for exchanging communication signals with the hands-free car kit, the Bluetooth communication means being communicatively coupled to the hands-free communication means for exchanging communication signals.

[c16] 16. The system of claim 15, further comprising:

an adapter connector means for transferring electrical power from the hands-free car kit to the adapter module and for exchanging communication signals between the hands-free communication means in the adapter module and the hands-free car kit.

[c17] 17. The system of claim 15, wherein the adapter module further comprises control means for providing control signals to the Bluetooth communication means and the hands-free communication means for controlling the exchange of communication signals between the Bluetooth-enabled wireless device and the hands-free car kit.

[c18] 18. The system of claim 15, wherein the adapter module further comprises a housing that at least partially encloses the Bluetooth communication means, the hands-free communication means and the control means, wherein said housing is designed to mate with said cradle.

[c19] 19. A system for adapting a hands-free car kit for communications with a Bluetooth-enabled wireless device, comprising:

an adapter module, the adapter module further comprising Bluetooth communication means for exchanging communication signals with the Bluetooth-enabled wireless device, hands-free communication means for exchanging communication signals with the hands-free car kit, the Bluetooth communication means being communicatively coupled to the hands-free communication means for exchanging communication signals between the Bluetooth-enabled wireless device and the hands-free communication means.

[c20] 20. The system of claim 19, wherein the adapter module further comprises control means for providing control signals to the Bluetooth communication means and the hands-free communication means in order to control the exchange of communication signals between the Bluetooth-enabled wireless device and the hands-free car kit.

[c21] 21. The system of claim 19, wherein the adapter module further comprises a housing means for substantially enclosing Bluetooth communication means, the hands-free communication means, and the control means, the housing means being adapted to mate with said hands free car kit.

[c22] 22. A method of adapting a hands-free car kit for communications with a Bluetooth-enabled wireless device, comprising:

- receiving communication signals from the hands-free car kit with hands-free communication logic;
- passing the communication signals from the hands-free communication logic to Bluetooth logic;
- converting the communication signals from a first form used by the hands-free car kit to a second form used by the Bluetooth-enabled wireless device; and
- transmitting the communications signals in the second form to the Bluetooth-enabled wireless device.

[c23] 23. A computer-readable medium whose contents cause control logic in an adapter module to perform a method to adapt a hands-free car kit for communications with a Bluetooth-enabled wireless device, the method comprising:

- receiving communication signals from the Bluetooth-enabled wireless device with Bluetooth logic;
- passing the communication signals from the Bluetooth logic to hands-free communication logic;
- converting the communication signals from a first form used by the Bluetooth-enabled wireless device to a second form used by the hands-free car kit under the direction of control logic; and
- transmitting the communications signals in the second form to the hands-free car kit.

[c24] 24. A system for use with a Bluetooth-enabled wireless device, comprising:

- a hands-free car kit,
- an adapter module, the adapter module further comprising:

Bluetooth logic substantially compatible with at least one Bluetooth standard to exchange communication signals with the Bluetooth-enabled wireless device,  
hands-free communication logic substantially compatible with the hands-free car kit to exchange communication signals with the hands-free car kit,  
wherein the Bluetooth logic is communicatively coupled to the hands-free communication logic to exchange communication signals between the Bluetooth-enabled wireless device and the hands-free car kit.

[c25] 25. A method for manufacturing an adapter module, comprising:  
integrating Bluetooth logic, hands-free communication logic and control logic into an adapter module, and  
at least partially enclosing the Bluetooth logic, hands-free communication logic and control logic in a housing adapted to fit into a hands-free car kit cradle.

[c26] 26. An adapter module, for use with a hands-free car kit having a cradle, comprising:  
communication logic for adapting said hands-free car kit to at least some capabilities of a mobile device; and  
a housing that substantially encloses said communication logic, wherein said housing is conformed to mate with the cradle of the hands-free car kit.



[c27] 27. The adapter module of claim 26, further comprising a connector for providing electrical power to the mobile device.

[c28] 28. The adapter module of claim 26, further comprising a fastener for holding the mobile device.

[c29] 29. The adapter module of claim 28, wherein said fastener is a button.

[c30] 30. The adapter module of claim 28, wherein said fastener is a clip.

[c31] 31. The adapter module of claim 26, further comprising an adapter cradle for holding the mobile device.